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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/070,429 | 03/18/2002 | Sakima Nobuhiro | 218838US2PCT | 1502 |
| 22850 | 7590 | 05/17/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | HOQUE, NASRIN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2631 | |

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,429

Applicant(s)

NOBUHIRO, SAKIMA

Examiner

Hoque Nasrin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date March 18, 2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Acknowledgement

1. The preliminary amendments filed on March 18, 2002 has been entered and made of record.

Specification

2. The disclosure is objected to because of the following informalities:

On page 14, line 26 "s7" should be replaced with --b7--. See Figure 4, step b7.

Appropriate correction is required.

Claim Objections

3. Claims objected because of the informalities where "Claims" should be replaced with --What is claimed-- or --I claim-- or --We claim--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 3 are rejected under 35 U.S.C.102 (b) as being anticipated by Kopmeiners et al. (US Patent 5,917,865).

6. Regarding claim 1, Kopmeiners discloses a gain control unit (Kopmeiners: Fig 1, block 136, column 4, lines 19 - 30) updates a variable gain amplifier (Kopmeiners: Fig 1, block 110, column 4, lines 10-16) in accordance with the output received from an analog to digital converter (Kopmeiners: Fig 1, block 120, column 4, lines 19 - 30). Kopmeiners further discloses that a mode selection unit (Kopmeiners: Fig 1, blocks 132, 134 and 135, column 4, lines 53 – 55 and lines 48-50) selects a mode based on output received from analog to digital converter (Kopmeiners: Fig 1, block 120, column 4, lines 19 - 30) and the selected mode information is received by a gain control unit (Kopmeiners: Fig 1, block 136, column 4, lines 19 - 30).

7. Regarding claim 2, Kopmeiners discloses that a variable gain amplifier (Kopmeiners: Fig 1, block 110, column 4, lines 10-16) amplifies a received RF signal, and an analog to digital converter (Kopmeiners: Fig 1, block 120, column 4, lines 19-30) converts the amplified signal, a gain control unit (Fig 1, block 136, column 4, lines 18-29) which updates a variable gain amplifier (Kopmeiners: Fig 1, block 110, column 4, lines 10-16) in accordance with the output received from an analog to digital converter (Kopmeiners : Fig 1, block 120 , column 4, lines 19 - 30) and a mode selection unit (Kopmeiners: Fig 1, blocks 132, 134 and 135) selects a mode based on output received from an analog to digital converter (Kopmeiners: Fig 1, block 120, column 4, lines 19-30) and the selected mode information is received by a gain control unit.

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8. Regarding claim 3, Kopmeiners discloses that a variable gain amplifier (Kopmeiners: Fig 1, block 110, column 4, lines 10-16) splits a received RF signal into orthogonal components and amplifies the signal (Kopmeiners: column 4, lines 10-18) and an analog to digital converters (Kopmeiners: Fig 1, block 120, column 4, lines 19 – 30) convert the amplified signals into digital signals; a gain control unit (Kopmeiners: Fig 1, block 136, column 4, lines 28-29) updates a variable gain amplifier (Kopmeiners: Fig 1, block 110, column 4, lines 10-16) in accordance with the output received from an analog to digital converters (Kopmeiners: Fig 1, block 120, column 4, lines 19 - 30) and a mode selection unit (Kopmeiners: Fig 1, blocks 132, 134 and 135, column 4, lines 53 – 55 and lines 48-50) selects a mode based on output received from analog to digital converters the selected mode information is received by a gain control unit / amplifier.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners in view of Loke (US 2003/0027610). Kopmeiners discloses all the subject matters mentioned above (as applied for claims 1, 2 and 3) except the limitations of usage of two independent gain selection units for quadrature signals to provide feedback to amplifiers. Loke discloses that gain setting units (Loke: Fig 5 blocks 56, 52,

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48, 58, and 50 explained in column 4, [0048] and [0046]) are providing feedback to VGAs separately. The references (Kopmeiners and Loke) are analogous art because they are from same field of endeavor for improved automatic gain control device for wireless communication at receiver. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that usage of different gain setting module will improve the AGC performance (Loke: column 4 [0050]). The motivation for doing so would have been to track and control signal components independently to minimize signal duration (Loke: column 4 [0051] and columns 4& 5 [0050]). Therefore it would have been obvious to combine above (Kopmeiners and Loke) references to obtain the invention as specified in claim 4.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners and Loke (as applied for claim 4) and further in view of Seki et al. (US Patent 5,805,643). Kopmeiners and Loke disclose all the subject matters mentioned above as applied for claim 4 except the limitation of two antennas receiving a radio signal and delivering orthogonal signals (Seki: Fig 2, blocks 10 & 20, column 3, lines 59 – 66 and outputs of blocks 41, 42, 43 and 44, column 3, lines 29 – 34). The references (Kopmeiners, Loke and Seki) are analogous art because they are from same field of endeavor for improved performance of an automatic gain controller device at receiver. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that usage of diversity receivers will improve the receiver performance for wireless communication. The motivation for doing so would have been to improve

automatic gain control by determining the proper gain signal level (Kopmeiners: column 3, lines 29 – 32). Therefore it would have been obvious to combine above (Kopmeiners, Loke and Seki) references to obtain the invention as specified in claim 5.

12. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners in view of Shimazaki (US Patent 5,812,025). Regarding claims 6 and 7, Kopmeiners discloses all the subject matters mentioned above (as applied to claims 2 and 3) except the limitation of a processing unit, which receives orthogonal outputs from ADC. Shimazaki discloses a processing unit (Shimazaki: Fig 1, block 18, column 2, lines 42 - 43) receives the orthogonal outputs from ADC. The references (Kopmeiners and Shimazaki) are analogous art because they are from same field of endeavor for wireless communication. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the output of ADC are furnished for different processing unit, e.g. demodulation etc. The motivation for doing so would have to extract received data from the signal (Shimazaki: column 2, lines 44 - 45). Therefore it would have been obvious to combine above (Kopmeiners, and Shimazaki) references to obtain the invention as specified in claims 6 and 7.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners and Loke (as applied to claim 4) and further in view of Shimazaki (US Patent 5,812,025). Regarding claim 8 Kopmeiners and Loke, disclose all the subject matters except the limitation of a processing unit, which receives orthogonal outputs

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from ADC. Shimazaki discloses a processing unit (Shimazaki: Fig 1, block 18, column 2, lines 42 - 43) receives the orthogonal outputs from ADC. The references (Kopmeiners, Loke, and Shimazaki) are analogous art because they are from same field of endeavor for wireless communication. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the output of ADC are furnished for different processing unit, e.g. demodulation etc. The motivation for doing so would have to extract received data from the signal (Shimazaki: column 2, lines 44 - 45). Therefore it would have been obvious to combine above (Kopmeiners, Loke and Shimazaki) references to obtain the invention as specified in claim 8.

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners, Loke and Seki (as applied to claim 5) and further in view of Shimazaki (US Patent 5,812,025). Regarding claim 9, Kopmeiners and Loke Seki disclose all the subject matters except the limitation of a processing unit, which receives orthogonal outputs from ADC. Shimazaki discloses a processing unit (Shimazaki: Fig 1, block 18, column 2, lines 42 - 43) receives the orthogonal outputs from ADC. The references (Kopmeiners, Loke, Seki and Shimazaki) are analogous art because they are from same field of endeavor for wireless communication. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the output of ADC are furnished for different processing unit, e.g. demodulation etc. The motivation for doing so would have to extract received data from the signal (Shimazaki: column 2, lines 44 -

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45). Therefore it would have been obvious to combine above (Kopmeiners, Loke, Seki and Shimazaki) references to obtain the invention as specified in claim 9.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoque Nasrin whose telephone number is 571-272-5948. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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PRIMARY EXAMINER


Nasrin Hoque
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